

MEL BAY'S MUSIC THEORY FOR THE ROCK GUITARIST

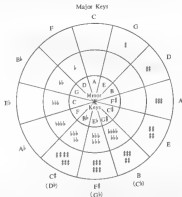


by
Ben Bolt



www.melbay.com 1-800-486-8886

CIRCLE OF FIFTHS



Circle of Fifths

The circular, clockwise arrangement of the 12 keys in order of ascending fifths (C, G, D, A, etc.)

The circle shows that after 12 steps, the first key is reached again.

The keys are presented in their natural order, which is increasing by one the number of sharps in the signature. Viewing the circle counter-clockwise (or, in order of descending fifths: C, F, B \flat , etc.) the keys follow each other with one more flat in the signature.

The transition from the sharp keys to the flat keys must be made at one point in the circle. For example, at G-sharp = A-flat (enharmonic change).

By starting from A instead of from C, the circle of signatures might also be used for the minor keys.

MACEDONIA

(Rock Solo by Ben Bolt)

(N.B.)



(N.B.)



(N.B.)



1.

(HARM.)

2.



1.

2.





(TARUM)



W 2



W 2 W 2 W 2

W 2



BLUES SCALE IN A

(1st position)

Notes A, B, C, D, E, F \sharp , G, A.

These notes can be played anywhere on the first board of the guitar.

Ex. 1

Common rock leads using the Blues Scale in A (1st position)

Ex. 2

Ex. 3

Ex. 4

Ex. 5

Ex. 6

Ex. 7

Ex. 8

BLUES SCALE IN A

(2nd position)

Ex. 9

Ex. 9 shows the Blues Scale in A (2nd position) on a single staff. The notes are: A, B, C, D, E, F#, G, A.

Common rock leads using the Blues Scale in A (2nd position)

Ex. 10

Ex. 11

Ex. 10 shows a sequence of eighth notes: A, B, C, D, E, F#, G, A.

Ex. 11 shows a sequence of eighth notes: C, A, G, A, G, E, G, E, D, C.

Ex. 12

Ex. 13

Ex. 12 shows a sequence of eighth notes: A, G, F#, E, D, C, B, A.

Ex. 13 shows a sequence of eighth notes: A, E, A, E, A, E, B, F#.

Ex. 14

Ex. 15

Ex. 14 shows a sequence of eighth notes: B, A, G, F#, E, D, C, A.

Ex. 15 shows a sequence of eighth notes: C, G, B, G, A, G, F#, D, E, C.

PLAYING TWO NOTES SIMULTANEOUSLY

(Using the Blues Scale in A)

Ex. 21

Ex. 22

Ex. 23

Ex. 21: Treble (G, A, B, C, D, E, F, G), Bass (G, A, B, C, D, E, F, G)

Ex. 22: Treble (G, A, B, C, D, E, F, G), Bass (G, A, B, C, D, E, F, G)

Ex. 23: Treble (A, B, C, D, E, F, G, A), Bass (A, B, C, D, E, F, G, A)

Double Slide

Ex. 24

Ex. 24: Treble (A, B, C, D, E, F, G, A), Bass (A, B, C, D, E, F, G, A)

G Chord Ex. 25
D Chord

Ex. 25: Treble (G, A, B, C, D, E, F, G), Bass (G, A, B, C, D, E, F, G)

Ex. 26: Treble (E, D, C, B, A, G, F, E), Bass (E, D, C, B, A, G, F, E)

THE A PENTATONIC SCALE

(5th Position)

The A Pentatonic Scale A, C, D, E, G

Ex. 26

Ex. 26: Treble (A, C, D, E, G, A, C, D, E, G, A, C), Bass (A, C, D, E, G, A, C, D, E, G, A, C)

This scale is the starting point of many rock leads

Ex. 27

Ex. 28

Ex. 29

Ex. 30

Ex. 31

Ex. 32

Ex. 33

Ex. 34

Ex. 35

Ex. 36

Ex. 37

Ex. 38

Ex. 39

EXERCISE

Pitch + Rhythm = Music

Pitch and rhythm must be organized intelligently to produce good music. Anyone can learn to play the right notes, but creating exciting rhythms and putting emotion into music are what make it come alive.

SUGGESTION: Take a sheet of paper and create short musical leads of your own, using the A Pentatonic Scale.

PASSING NOTES

The notes in parentheses are the passing notes of the Blues Scale in A.

Ex. 40

Example 40 displays the A Blues Scale on a grand staff (treble and bass clefs). The notes are written as eighth notes. The treble clef staff contains the notes: A, C, D, (D#), F, G, (G#), A, C, (C#), D, (D#), E, F#, G, A, B, C. The bass clef staff contains the notes: D, E, F, (F#), G, A, B, (B#), C, D, (D#), E, F, G, A, B, C. The notes in parentheses represent the passing notes of the Blues Scale in A.

These passing notes are used by many musicians to add color to musical compositions.

Ex. 41

Example 41 shows a short musical phrase on a grand staff. The treble clef staff contains the notes: G, A, A, G, (G#), A. The bass clef staff contains the notes: D, E, F, G, A, B. A vertical dashed line separates the two measures of the phrase.

Continue rock leads using passing notes (5th position)

Ex. 42

D C B A G F E D

Ex. 43

D C B A G F E D

Ex. 44

D C B A G F E D

Ex. 45

D C B A G F E D

Ex. 46

D C B A G F E D

Ex. 47

D C B A G F E D

BLUES SCALE IN A

(3rd Position)

Ex. 48

A B C D E F# G A B C D E F# G A B C

IMPORTANT

This scale is identical to the G Major Scale, except it begins on the A note instead of the G note.

LEAD EXERCISES

10 of 10

Ex. 35 Ex. 36 Ex. 37

C D E G E D C E A G E C D C D C A E G E D C

Ex. 61 Ex. 62 Ex. 63

D E G A C A A A A A G A A A A A C D G E E A A G

Ex. 64 Ex. 65 Ex. 66

E E A G G G C A G E E D C A E A A G G

Ex. 67 Ex. 68 Ex. 69

D G G A G G E D A C A D G C C A G E G E C C C E A G C A A

Ex. 70 Ex. 71 (Aolian Mode)

A G E E A G E G C D C A E A C A G A G F E F E D D

Ex 72 Ex 73 Ex 74

E F A C A E F G F E F C C A F F A G E B A G E F

C D F A C C D F A C C D F A C

Ex 75 Ex 76 Ex 77

G A A G E E D C C A D D C A G C A G A F A C

C D F A C C D F A C C D F A C

Ex 78 Ex 79 Ex 80

B C B A G E C A E D G B A G F E D C A E C B A

C D F A C C D F A C C D F A C

Ex 81 Ex 82 Ex 83 Ex 84

C A F F A B A F A B C D C B D D

C D F A C C D F A C C D F A C C D F A C

Ex. 85

Ex. 86

Ex. 87

Ex. 85: Treble staff melody: G A B C D E F G; Bass staff: G A B C D E F G.

Ex. 86: Treble staff melody: C D E F G A B C; Bass staff: C D E F G A B C.

Ex. 87: Treble staff melody: B C D E F G A B; Bass staff: B C D E F G A B.

Ex. 88

Ex. 89

Ex. 88: Treble staff melody: E F G A B C D E F G A B C D E F G A B C D E F G A B C.

Ex. 89: Treble staff melody: C D E F G A B C D E F G A B C D E F G A B C.

Ex. 90

Ex. 91

Ex. 92

Ex. 93

Ex. 90: Treble staff melody: E F G A B C; Bass staff: E F G A B C.

Ex. 91: Treble staff melody: D E F G A B; Bass staff: D E F G A B.

Ex. 92: Treble staff melody: E F G A B C; Bass staff: E F G A B C.

Ex. 93: Treble staff melody: C D E F G A; Bass staff: C D E F G A.

Ex. 94

Ex. 95

Ex. 96

Ex. 97

Ex. 94: Treble staff melody: G A B C D E F G; Bass staff: G A B C D E F G.

Ex. 95: Treble staff melody: C D E F G A; Bass staff: C D E F G A.

Ex. 96: Treble staff melody: C D E F G A; Bass staff: C D E F G A.

Ex. 97: Treble staff melody: C D E F G A; Bass staff: C D E F G A.

Ex. 98

Ex.

Ex. 99

Ex. 98: A B C D E A C A G A

Ex. 99: C D E D C

Ex. 100

Ex. 101

Ex. 102

Ex. 100: G E C B C B A

Ex. 101: E G A C A G A

Ex. 102: G E G E A A

Ex. 103

Ex. 103: E G E G A G A C A C D C D E D E G E G A G A C A C D C

Ex. 104

Ex. 105

Ex. 106

Ex. 104: D D C D C A

Ex. 105: E G

Ex. 106: E G E D C A A

Ex 116 Ex 117 Ex 118 Ex 119 Ex 120

These examples show various melodic and harmonic exercises. Ex 116 features a melody in the right hand and a bass line in the left hand. Ex 117 shows a similar structure with different notes. Ex 118 introduces a new melody. Ex 119 and 120 show more complex harmonic exercises with multiple voices.

THE "TRILL"

Definition: "Trill" — a rapid succession of hammer-ons and pull-offs, ascending or descending.



CHROMATIC SCALE

Definition: Chromatic Scale — ascending or descending in half tones. Consists of 12 tones to the octave.

EXAMPLE:

C	C [#]	D	D [#]	E	F	F [#]	G	G [#]	A	A [#]	B
1	2	3	4	5	6	7	8	9	10	11	12

CHROMATIC SCALE ON THE FIRST STRING

(Open Position)



DIATONIC SCALE

This scale consists of five whole tones and two semitones. The semitones are located between the third and fourth degrees and between the seventh and eighth degrees of the scale.

degrees	1	2	3	4	5	6	7	8
notes	C	D	E	F	G	A	B	C
			↘ 1/2 tone				↘ 1/2 tone	

Music is called diatonic if it is confined to the notes of this scale. There is a corresponding scale in each key.

Example:

G Major Diatonic Scale							
1	2	3	4	5	6	7	8
G	A	B	C	D	E	F#	G
		↘ 1/2 tone				↘ 1/2 tone	

All modes are taken from the Diatonic Scale.

MODES USING THE G MAJOR SCALE

Modes are synonymous with moods. If you take any major scale and begin with different degrees (notes) of the scale, you can change the mood of the musical line.

Since many rock stars use the A Blues Scale, it's a good key to learn first. However, to learn all the modes, begin with a major scale because all modes are based on the major scale.

Since the G Major Scale contains the same notes as the A Blues Scale, let's start there to study modes.



You can use the G Major Scale in the key of A.

IONIAN MODE OF G MAJOR

Begins on the 1st degree of the scale

Ex. 123

G A B C D E F# G A B C D E F# G

G A B C D E F G A B C D E F G

DORIAN MODE OF G MAJOR

Begins on the 2nd degree of the scale

Ex. 124

A B C D E F# G A B C D E F# G A

A B C D E F G A B C D E F G A

PHRYGIAN MODE OF G MAJOR

Begins on the 3rd degree of the scale

Ex. 125

B C D E F# G A B C D E F# G A B

B C D E F G A B C D E F G A B

LYDIAN MODE OF G MAJOR

Begins on the 4th degree of the scale

Ex. 126

C D E F# G A B C D E F# G A B C

C D E F G A B C D E F G A B C

MIXOLYDIAN MODE OF G MAJOR

Begins on the 5th degree of the scale

Ex. 127

D E F# G A B C D E F# G A B C D

10 12 13 12 10 9 8 10 12 13 12 10 9 8 10

AEOLIAN MODE OF G MAJOR

Begins on the 6th degree of the scale

Ex. 128

E F# G A B C D E F# G A B C D E

12 13 12 10 9 8 10 12 13 12 10 9 8 10 12

ALTERNATE FINGERING FOR G AEOLIAN

Ex. 128B

E F# G A B C D E F# G A B C D E

12 14 15 14 12 10 12 14 15 14 12 10 12 14 15

There are numerous ways and positions to play the different modes. Learn the names of notes on all strings and frets to take full advantage of the modal concepts

LOCRIAN MODE OF G MAJOR

Begins on the 7th degree of the scale

Ex. 129



Because there are 12 frets to the octave, you can play G Locrian in the 2nd position by subtracting 12 from each fret.

Ex. 129B



THE RELATIVE MINOR KEY

Every major key has a relative minor key. It's called "relative" because it shares the same key signature (has the same sharps or flats).

The relative minor of any major key is found on the sixth degree of the Diatonic Scale

Example:

G Major	G, A, B, C, D, E, F#, G
Degrees	1 2 3 4 5 6 7 Octave
	*

(* relative minor)

Therefore, E is the relative minor of G Major

For further information, see Circle of Fifths (p. 37)

USING THE MODES

The most frequently asked question about modes is: "Which mode do I use and where do I use it?"

The following basic musical techniques will help answer that question.

1. The G Major Scale can be used for the key of E Minor, because E is the Relative Minor of G and shares the same "Key Signature."

Definition: Key Signature — The flats or sharps at the beginning of each staff to indicate the key of a composition.

Therefore, when playing in the Key of E, all modes of the G Major Scale can be applied.

In rock music, the most common chords in E are: E, F#, G, A, B, C, and D

To apply the modes depends on which chord is played. For example, if an E chord is played, the G Aeolian mode is used because the G Aeolian mode begins with an E note.

When the chord changes to B, you can choose the mode of G that begins with a B note. In this case, the G Phrygian mode is used.

2. To take this application a step further, the chord of E Minor has E, G, and B notes. Therefore, the G Aeolian, Ionian, and Phrygian Modes can be used for this chord.

This technique allows you lots of flexibility in your playing.

Diagram:

E MINOR CHORD

notes	modes
B	Phrygian
G	Ionian
E	Aeolian

To find which notes are in which chords, you need to study Harmony. The basic principles of Harmony are found in two sections of this book: Chords and Making Chords

2 (Using Modes continued)

Suppose we have a chord progression of E Minor, B Minor, and G.

Chord Progression

E Minor		B Minor		G	
notes	modes	notes	modes	notes	modes
E^{\flat}	Phrygian	F $^{\sharp}$	Locrian	D	Mixolydian
G	Ionian	D	Mixolydian	E^{\flat}	Phrygian
E	Aeolian	E^{\flat}	Phrygian	G	Ionian

The common note in these 3 chords is the B note. In this chord progression, you could play the Phrygian Mode alone, or mix it up.

(Note: Sometimes the Locrian Mode doesn't fit with common chord progressions. It is the least used mode. However, through experimentation, you can discover its possibilities.)

3 Another frequently asked question about modes is: "Can I use modes from other keys to play in E besides its relative major key of G?"

The answer: You can use any mode from any key to express yourself musically as long as it sounds good.

One of the best keys to use (besides a relative major) is the major key found one step below the key you are playing in.

For example, if you are in E, the D would be one step below. All the modes from D can be used because the D Dorian Mode (E, F $^{\sharp}$, G, A, B, C $^{\sharp}$, D, E) has the same notes as the E Blues minor scale.

Use the same application as previously mentioned.

HOW TO CREATE MINOR SCALES

There are four types of Minor Scales: Natural Minor, Harmonic Minor, Melodic Minor, and the Blues Minor Scale.

I. Natural Minor Scale

If we use a C Major Scale and begin on the A note (4th degree) and write to its octave, we will have an A Natural Minor Scale. As previously stated, this is the Aeolian Mode.

A B C D E F G A

Ex. 130

Natural Minor in A



The Natural Minor Scale is also known as the Pure Minor Scale and/or the Relative Minor Scale.

Example using the Natural Minor

Ex. 131



2 Harmonic Minor Scale

This scale is the same as the Natural Minor Scale, except the 7th degree (note) is raised in pitch by a half step (one fret). In this case, the G goes up in pitch to a G^b

Harmonic Minor in A

Ex 132

Ex 133

Ex 133B

Ex 132: Ascending A Harmonic Minor Scale

Ex 133: Descending A Harmonic Minor Scale

Ex 133B: A Harmonic Minor Scale with repeat sign

Notes: A B C D E F G^b A

Leads using the A Harmonic Minor Scale

Ex 134

Ex 135

Ex 134: Descending lead using A Harmonic Minor Scale

Ex 135: Ascending lead using A Harmonic Minor Scale

Notes: A A G E A G^b A F E

Notes: G^b B D F G^b B D F G^b B D B G^b F D

Notes: B G^b F D B G^b A E A C F A

3. Melodic Minor Scale

Start with the Natural Minor (Aeolian Mode). As the scale ascends in pitch, the 6th and 7th degrees are raised one half step (one fret). The scale descends exactly like the Natural Minor Scale.

EXAMPLE:

Melodic Minor in A

Ex. 136

A B C D E F# G# A B C D E A

Note: The Melodic Minor Scales are ideal for technical study because they ascend differently than they descend.

4. Blues Minor Scale

Take the Aeolian Mode of any Major Scale and raise the 6th degree one half step (one fret) to get a Blues Minor Scale.

Ex. 137

Blues Minor in A

A B C D E F# G A B C D E F# G A

CHORDS

Definition: Chords — when 2 or more notes are played simultaneously

Definition: Root note — a chord grows from the bottom, or base, of the chord. Therefore, the bottom note is called the "root note". For example, the "root note" of a G Chord is a G note

Chords are made by choosing the root note, the 3rd degree from the root, and the 5th degree from the root. This is known as a "complete" chord

IMPORTANT: Always count the root note as the 1st degree (note).

MAKING CHORDS from MAJOR DIATONIC SCALE

1. Creating a D Chord from a D Scale:

D	E	F [♯]	G	A	B	C [♯]	D
1		3		5			
(root)							

D Major Chord = D F[♯] A

2. Creating an E Minor Chord from a D Scale:

D	E	F [♯]	G	A	B	C [♯]	D
	1		3		5		
(root)							

E Minor Chord = E G B

3. Creating F[♯] Minor Chord from a D Scale:

D	E	F [♯]	G	A	B	C [♯]	D
		1		3		5	
(root)							

F[♯] Minor Chord = F[♯] A C[♯]

4. Other chords:

G Major Chord	=	G	B	D
A Major Chord	=	A	C [♯]	E
B Minor Chord	=	B	D	F [♯]
C [♯] Diminished Chord	=	C [♯]	E	G

MAJOR, MINOR, AND DIMINISHED CHORDS USING THE MAJOR SCALE

If you take any Major Scale and make a chord on each degree of that Scale, you will have a Major Chord on the 1st, 4th, and 5th degrees.

You will have a Minor Chord on the 2nd, 3rd, and 6th degrees.

The 7th degree is the Diminished 5th Chord.

EXAMPLE

D MAJOR SCALE

	D	E	F#	G	A	B	C#	D
Degree	1	2	3	4	5	6	7	Octave
Chords formed ...	D	Em	F#m	G	A	Bm	C#dim	

ARPEGGIOS

Arpeggios are chords that are played one note at a time, rather than simultaneously

EXAMPLE

F Chord
F Arpeggio

Arpeggios using Major, Minor, and Diminished Chord Patterns

D Major Arpeggio

Ex. 138

E Minor Arpeggio

Ex. 139

F# Minor Arpeggio

Ex. 140

G Major Arpeggio

Ex. 141

A Major Arpeggio

Ex. 142

B Minor Arpeggio

Ex. 143

C# Diminished Arpeggio

Ex. 144

D Chord

CHORD INVERSIONS

Definition: Inversion — the substitution of one note for another in the bass line of chords

EXAMPLE:

1. Take a G Chord in the root position:

G Chord	D
	B
	G (root in bass)

2. Then, if you decide to put the root on the top, this leaves the 3rd degree of the chord in the bass. This is called the 1st inversion.

	G (root on top)
1st inversion	D
	B

3. Furthermore, if you place the 5th degree in the bass, it's called the 2nd inversion.

	B	G
2nd inversion	G or B	
	D	D

Important: It doesn't matter which note appears in the middle or top position. The inversion is determined by which note appears in the bass.

Inversions give total flexibility when composing the chordal part of a composition

INTERVALS

The distance in pitch between two notes is an "interval."

Example:	C — C	unison
	C — D	second
	C — E	third
	C — F	fourth
	C — G	fifth
	C — A	sixth
	C — B	seventh
	C — C'	octave

The name of the interval depends on the number of semitones (or frets) contained in the interval.

Intervals greater than the octave are called **Compound Intervals**.

Example:	C — D'	ninth (or, compound second)
	C — E'	tenth (or, compound third)

The five types of intervals are: Major, Minor, Augmented, Diminished, and Perfect.

There is no major or minor interval for fourths, fifths, and octaves. The perfect fourth or fifth works for both major and minor situations.

The following table shows the classification and terminology for all intervals contained within the octave. The numbers in parentheses indicate the number of semitones, or frets, in each interval.

TABLE OF INTERVALS

	Diminished	Minor	Major	Augmented
Second	C [♭] — D [♮] (8)	C — D [♮] (9)	C — D (10)	C — D [♯] (11)
Third	C [♭] — E [♮] (10)	C — E [♮] (11)	C — E (12)	C — E [♯] (13)
Fourth	C [♭] — A [♮] (11)	C — A [♮] (12)	C — A (13)	C — A [♯] (14)
Fifth	C [♭] — B [♮] (12)	C — B [♮] (13)	C — B (14)	C — B [♯] (15)
	Perfect			
Fourth	C [♭] — F (4)	C — F (5)	C — F (5)	C — F [♯] (6)
Fifth	C [♭] — G (6)	C — G (7)	C — G (7)	C — G [♯] (8)
Octave	C [♭] — C'(11)	C — C' (12)	C — C' (12)	C — C [♯] (13)

INTERVALS USED IN MAKING MAJOR, MINOR, DIMINISHED, AND AUGMENTED CHORDS

Intervals		Chords
Major 3rd and Perfect 5th	=	Major Chord
Major 3rd and Augmented 5th	=	Augmented Chord
Minor 3rd and Perfect 5th	=	Minor Chord
Minor 3rd and Diminished 5th	=	Diminished Chord

POWER CHORDS

The "Power Chord" is created when you omit the 3rd degree (note) of the chord. Since the 3rd degree determines whether the chord is Major or Minor, the Power Chord becomes useful in both Major or Minor Chord Progressions.

EXAMPLE: Half Power Chord

Ex. 145

Full Power Chord

Ex. 146

Appoggiato Variation

Ex. 147

Ex. 148

Summary. The "complete" chord has a root note, 3rd degree, and 5th degree. The "Power Chord" omits the 3rd degree (note).

INVERSION OF INTERVALS

To find what an interval would be when it is inverted, simply subtract the number of the interval from 9

Example: C — G (perfect fifth) 9
 Subtract 5 from 9 = 4
 G — C perfect fourth is the result 4

The above example can be used for all intervals.

Interval of a second inverted becomes a seventh. 9
 — 2
 7

The inversion of a Major interval becomes Minor.

The inversion of a Minor becomes Major

The inversion of an Augmented becomes Diminished.

The inversion of a Diminished becomes Augmented.

The inversion of a Perfect interval remains Perfect.

Hence, an inverted Major 3rd interval is a minor 6th interval 9
 — 3 Major
 6 Minor

Summary

All of these intervals are used in rock music

The perfect fifth interval is the "Power Chord." Perfect fourth intervals are nothing more than inverted perfect fifths. Almost everything you play will contain one or more of the intervals above. Another definition of Music could be: "A sequence of intelligently placed intervals mixed with rhythm."

INCOMPLETE CHORDS

Definition: Incomplete Chord — a chord with the 5th degree of the chord left out

Ex. 149

Ex. 150